

SEQUENCE LISTING

<110> SIERRA-HONIGMANN, Rocio M.

<120> MODULATION OF ANGIOGENESIS AND WOUND HEALING

<130> 044574-5029

<140> US 09/700,813

<141> 1999-05-20

<150> PCT/US99/11209

<151> 1999-05-20

<150> US 60/086,354

<151> 1998-05-28

<160> 21

<170> PatentIn version 3.1

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Gly	Leu	His	Met	Glu	Val	Thr	Asp	Asp	Gly	Asn	Leu	Lys	Ile	Ser	Trp	245	250	255	
Asp	Ser	Gln	Thr	Met	Ala	Pro	Phe	Pro	Leu	Gln	Tyr	Gln	Val	Lys	Tyr	260	265	270	
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Gln Val Arg Ser Lys Arg Leu Asp Gly Ser Gly Val Trp Ser Asp Trp
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 370 375 380

Arg Val Ser Lys Val Thr Phe Ser Asn Leu Lys Ala Thr Arg Pro Arg
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Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu Gln Ala Cys
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His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val Asn Ile Asn Ile
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Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg Trp Ser
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Pro Ser Thr Ile Gln Ser Leu Val Gly Ser Thr Val Gln Leu Arg Tyr
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Pro Glu Phe Trp Arg Lys Met Asp Gly Asp Val Thr Lys Lys Glu Arg
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Glu Pro Ala His Thr Val Thr Val Leu Ala Val Asn Ser Leu Gly Ala
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Ser Ala Val Glu Ser Leu Ser Ala Tyr Pro Leu Ser Ser Ser Cys Val

740

745

750

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Val Ile Glu Trp Lys Ile Leu Asn Glu Asp Asp Gly Met Lys Trp Leu
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Arg Ile Pro Ser Asn Val Lys Lys Phe Tyr Ile His Asp Asn Phe Ile
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Val Gly Lys Pro Lys Ile Ile Asn Gly Phe Thr Lys Asp Ala Ile Asp
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Lys Gln Gln Asn Asp Ala Gly Leu Tyr Val Ile Val Pro Ile Ile Ile
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Ser Ser Cys Val Leu Leu Leu Gly Thr Leu Leu Ile Ser His Gln Arg
 850 855 860

Met Lys Lys Leu Phe Trp Asp Asp Val Pro Asn Pro Lys Asn Cys Ser
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Trp Ala Gln Gly Leu Asn Phe Gln Lys Pro Glu Thr Phe Glu His Leu
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Phe Thr Lys His Ala Glu Ser Val Ile Phe Gly Pro Leu Leu Leu Glu
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Tyr Val Ile Thr Ala Leu Asn Leu Ala Tyr Pro Thr Ser Pro Trp Arg
20           25           30

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Phe Lys Leu Phe Cys Ala Pro Pro Ser Thr Thr Asp Asp Ser Phe Leu
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Ser Pro Ala Gly Val Pro Asn Asn Thr Ser Ser Leu Lys Gly Ala Ser
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Glu Ala Leu Val Glu Ala Lys Phe Asn Ser Thr Gly Ile Tyr Val Ser
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Gln Asn Cys Ser Ala Leu Thr Gly Asn Thr Glu Gly Lys Thr Leu Ala
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Ser Val Val Lys Pro Leu Val Phe Arg Gln Leu Gly Val Asn Trp Asp
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Ile Glu Cys Trp Met Lys Gly Asp Leu Thr Leu Phe Ile Cys His Met
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Glu Pro Leu Leu Lys Asn Pro Phe Lys Asn Tyr Asp Ser Lys Val His
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Leu Leu Tyr Asp Leu Pro Glu Val Ile Asp Asp Leu Pro Leu Pro Pro
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Leu Lys Asp Ser Phe Gln Thr Val Gln Cys Asn Cys Ser Val Arg Glu
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Cys Glu Cys His Val Pro Val Pro Arg Ala Lys Val Asn Tyr Ala Leu
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Leu Met Tyr Leu Glu Ile Thr Ser Ala Gly Val Ser Phe Gln Ser Pro
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Leu Met Ser Leu Gln Pro Met Leu Val Val Lys Pro Asp Pro Pro Leu
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Gly Leu Arg Met Glu Val Thr Asp Asp Gly Asn Leu Lys Ile Ser Trp
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Asp Ser Gln Thr Lys Ala Pro Phe Pro Leu Gln Tyr Gln Val Lys Tyr
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Leu Glu Asn Ser Thr Ile Val Arg Glu Ala Ala Glu Ile Val Ser Asp
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Thr Ser Leu Leu Val Asp Ser Val Leu Pro Gly Ser Ser Tyr Glu Val
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Gln Val Arg Ser Lys Arg Leu Asp Gly Ser Gly Val Trp Ser Asp Trp
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Ser Leu Pro Gln Leu Phe Thr Thr Gln Asp Val Met Tyr Phe Pro Pro
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Lys Ile Leu Thr Ser Val Gly Ser Asn Ala Ser Phe Cys Cys Ile Tyr
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Lys Asn Glu Asn Gln Thr Ile Ser Ser Lys Gln Ile Val Trp Trp Met
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Asn Leu Ala Glu Lys Ile Pro Glu Thr Gln Tyr Asn Thr Val Ser Asp
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His Ile Ser Lys Val Thr Phe Ser Asn Leu Lys Ala Thr Arg Pro Arg
 385 390 395 400

Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu Gln Ala Cys
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His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val Asn Ile Asn Ile
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Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg Trp Ser
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Pro Ser Thr Ile Gln Ser Leu Val Gly Ser Thr Val Gln Leu Arg Tyr
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His Arg Arg Ser Leu Tyr Cys Pro Asp Asn Pro Ser Ile Arg Pro Thr
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Ser Glu Leu Lys Asn Cys Val Leu Gln Thr Asp Gly Phe Tyr Glu Cys
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Val Phe Gln Pro Ile Phe Leu Leu Ser Gly Tyr Thr Met Trp Ile Arg
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Pro Asp Ser Val Val Lys Pro Leu Pro Pro Ser Asn Val Lys Ala Glu

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Val Arg Cys Arg Arg Leu Asp Gly Leu Gly Tyr Trp Ser Asn Trp Ser 610 615 620		
Ser Pro Ala Tyr Thr Leu Val Met Asp Val Lys Val Pro Met Arg Gly 625 630 635 640		
Pro Glu Phe Trp Arg Ile Met Asp Gly Asp Ile Thr Lys Lys Glu Arg 645 650 655		
Asn Val Thr Leu Leu Trp Lys Pro Leu Met Lys Asn Asp Ser Leu Cys 660 665 670		
Ser Val Arg Arg Tyr Val Val Lys His Arg Thr Ala His Asn Gly Thr 675 680 685		
Trp Ser Gln Asp Val Gly Asn Gln Thr Asn Leu Thr Phe Leu Trp Ala 690 695 700		
Glu Ser Ala His Thr Val Thr Val Leu Ala Ile Asn Ser Ile Gly Ala 705 710 715 720		
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Val Ile Glu Trp Lys Asn Leu Asn Asp Asp Asp Gly Met Lys Trp Leu
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Arg Ile Pro Ser Asn Val Asn Lys Tyr Tyr Ile His Asp Asn Phe Ile
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Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr Pro Val Phe Met Glu Gly
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Val Gly Lys Pro Lys Ile Ile Asn Gly Phe Thr Lys Asp Asp Ile Ala
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Lys Gln Gln Asn Asp Ala Gly Leu Tyr Val Ile Val Pro Ile Ile Ile
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Phe Thr Lys His Ala Glu Ser Val Ile Phe Gly Pro Leu Leu Leu Glu
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Pro Glu Pro Val Ser Glu Glu Ile Ser Val Asp Thr Ala Trp Lys Asn
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Lys Asp Glu Met Val Pro Ala Ala Met Val Ser Leu Leu Leu Thr Thr
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Leu Glu Asn Ser Thr Ile Val Arg Glu Ala Ala Glu Ile Val Ser Asp
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Thr Ser Leu Leu Val Asp Ser Val Leu Pro Gly Ser Ser Tyr Glu Val
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Gln Val Arg Ser Lys Arg Leu Asp Gly Ser Gly Val Trp Ser Asp Trp
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Ser Leu Pro Gln Leu Phe Thr Thr Gln Asp Val Met Tyr Phe Pro Pro
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Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu Gln Ala Cys
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Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg Trp Ser
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Pro Ser Thr Ile Gln Ser Leu Val Gly Ser Thr Val Gln Leu Arg Tyr
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Ser Pro Ala Tyr Thr Leu Val Met Asp Val Lys Val Pro Met Arg Gly
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Pro Glu Phe Trp Arg Ile Met Asp Gly Asp Ile Thr Lys Lys Glu Arg

645

650

655

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Ser Val Arg Arg Tyr Val Val Lys His Arg Thr Ala His Asn Gly Thr
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Glu Ser Ala His Thr Val Thr Val Leu Ala Ile Asn Ser Ile Gly Ala
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Ser Leu Val Asn Phe Asn Leu Thr Phe Ser Trp Pro Met Ser Lys Val
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Asn Ala Val Gln Ser Leu Ser Ala Tyr Pro Leu Ser Ser Ser Cys Val
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Val Ile Glu Trp Lys Asn Leu Asn Asp Asp Asp Gly Met Lys Trp Leu
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Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr Pro Val Phe Met Glu Gly
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Lys Asp Glu Met Val Pro Ala Ala Met Val Ser Leu Leu Leu Thr Thr
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ttcctggata ctatcaccca gtgattacaa gctaattgat tttattattg agtggaaaaa	2520
tcttaatgaa gatggtgaaa taaaatggct tagaatctct tcatctgtta agaagtatta	2580
tatccatgat cattttatcc ccattgagaa gtaccagttc agtctttacc caatatttat	2640

ggaaggagtg ggaaaaccaa agataattaa tagtttctact caagatgata ttgaaaaaca 2700
ccagagtgat gcaggtttat atgtaattgt gccagtaatt atttcctctt ccatcttatt 2760
gcttggaaaca ttattaatat cacaccaaag aatgaaaaag ctatttttggg aagatgttcc 2820
gaacccaag aattgttcct gggcacaagg acttaatttt cagaagccag aaacgtttga 2880
gcatcttttt atcaagcata cagcatcagt gacatgtggt cctcttcttt tggagcctga 2940
aacaatttca gaagatatca gtgttgatac atcatggaaa aataaagatg agatgatgcc 3000
aacaactgtg gtctctctac tttcaacaac agatcttgaa aagggttctg tttgtattag 3060
tgaccagttc aacagtgtta acttctctga ggctgagggg actgaggtaa cctatgaggc 3120
cgaaagccag agacaaccct ttgttaaata cgccacgctg atcagcaact ctaaaccaag 3180
tgaaactggg gaagaacaag ggcttataaa tagttcagtc accaagtgtc tctctagcaa 3240
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gacttttgca tcttacatgc ctcaattcca aacttgttct actcagactc ataagatcat 3660
ggaaaacaag atgtgtgacc taactgtgta atttactga agaaaccttc agatttgtgt 3720
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<210> 10
<211> 1165
<212> PRT
<213> Homo sapiens

<400> 10

Met Ile Cys Gln Lys Phe Cys Val Val Leu Leu His Trp Glu Phe Ile
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Tyr Val Ile Thr Ala Phe Asn Leu Ser Tyr Pro Ile Thr Pro Trp Arg
20 25 30

Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr Asp Tyr Phe Leu
35 40 45

Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser Asn Gly His Tyr
50 55 60

Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly Thr His Phe Ser
65 70 75 80

Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg Ser Glu Gln Asp
85 90 95

Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly Lys Thr Phe Val
100 105 110

Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp Ala Asn Trp Asn
115 120 125

Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe Ile Cys Tyr Val
130 135 140

Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn Tyr Lys Val His
145 150 155 160

Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser Pro Leu Val Pro
165 170 175

Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys Ser Val His Glu
180 185 190

Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys Leu Asn Asp Thr
195 200 205

Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val Ile Phe Gln Ser
210 215 220

Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys Pro Asp Pro Pro
225 230 235 240

Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn Leu Lys Ile Ser
245 250 255

Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln Tyr Gln Val Lys

260	265	270
Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala Asp Lys Ile Val 275 280 285		
Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro Gly Ser Ser Tyr 290 295 300		
Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro Gly Ile Trp Ser 305 310 315 320		
Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp Val Ile Tyr Phe 325 330 335		
Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val Ser Phe His Cys 340 345 350		
Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys Glu Ile Val Trp 355 360 365		
Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln Tyr Asp Val Val 370 375 380		
Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu Asn Glu Thr Lys 385 390 395 400		
Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu His 405 410 415		
Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val Asn Ile 420 425 430		
Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg 435 440 445		
Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser Thr Leu Gln Leu 450 455 460		
Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile Pro Ser Ile His 465 470 475 480		
Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser Asp Gly Phe Tyr 485 490 495		

Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly Tyr Thr Met Trp
 500 505 510

Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser Pro Pro Thr Cys
 515 520 525

Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro Ser Ser Val Lys
 530 535 540

Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile Ser Trp Glu Lys
 545 550 555 560

Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile Arg Tyr Gly Leu
 565 570 575

Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val Tyr Asp Ala Lys
 580 585 590

Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys Ala Val Tyr Ala
 595 600 605

Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly Tyr Trp Ser Asn
 610 615 620

Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile Lys Val Pro Met
 625 630 635 640

Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp Thr Met Lys Lys
 645 650 655

Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met Lys Asn Asp Ser
 660 665 670

Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His Thr Ser Cys Asn
 675 680 685

Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys Phe Thr Phe Leu
 690 695 700

Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala Ile Asn Ser Ile
 705 710 715 720

Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser Trp Pro Met Ser
 725 730 735

Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro Leu Asn Ser Ser
 740 745 750

Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp Tyr Lys Leu Met
 755 760 765

Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp Gly Glu Ile Lys
 770 775 780

Trp Leu Arg Ile Ser Ser Ser Val Lys Lys Tyr Tyr Ile His Asp His
 785 790 795 800

Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr Pro Ile Phe Met
 805 810 815

Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe Thr Gln Asp Asp
 820 825 830

Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val Ile Val Pro Val
 835 840 845

Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu Leu Ile Ser His
 850 855 860

Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro Asn Pro Lys Asn
 865 870 875 880

Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Pro Glu Thr Phe Glu
 885 890 895

His Leu Phe Ile Lys His Thr Ala Ser Val Thr Cys Gly Pro Leu Leu
 900 905 910

Leu Glu Pro Glu Thr Ile Ser Glu Asp Ile Ser Val Asp Thr Ser Trp
 915 920 925

Lys Asn Lys Asp Glu Met Met Pro Thr Thr Val Val Ser Leu Leu Ser
 930 935 940

Thr Thr Asp Leu Glu Lys Gly Ser Val Cys Ile Ser Asp Gln Phe Asn
 945 950 955 960

Ser Val Asn Phe Ser Glu Ala Glu Gly Thr Glu Val Thr Tyr Glu Ala
 965 970 975

Glu Ser Gln Arg Gln Pro Phe Val Lys Tyr Ala Thr Leu Ile Ser Asn
 980 985 990

Ser Lys Pro Ser Glu Thr Gly Glu Glu Gln Gly Leu Ile Asn Ser Ser
 995 1000 1005

Val Thr Lys Cys Phe Ser Ser Lys Asn Ser Pro Leu Lys Asp Ser
 1010 1015 1020

Phe Ser Asn Ser Ser Trp Glu Ile Glu Ala Gln Ala Phe Phe Ile
 1025 1030 1035

Leu Ser Asp Gln His Pro Asn Ile Ile Ser Pro His Leu Thr Phe
 1040 1045 1050

Ser Glu Gly Leu Asp Glu Leu Leu Lys Leu Glu Gly Asn Phe Pro
 1055 1060 1065

Glu Glu Asn Asn Asp Lys Lys Ser Ile Tyr Tyr Leu Gly Val Thr
 1070 1075 1080

Ser Ile Lys Lys Arg Glu Ser Gly Val Leu Leu Thr Asp Lys Ser
 1085 1090 1095

Arg Val Ser Cys Pro Phe Pro Ala Pro Cys Leu Phe Thr Asp Ile
 1100 1105 1110

Arg Val Leu Gln Asp Ser Cys Ser His Phe Val Glu Asn Asn Ile
 1115 1120 1125

Asn Leu Gly Thr Ser Ser Lys Lys Thr Phe Ala Ser Tyr Met Pro
 1130 1135 1140

Gln Phe Gln Thr Cys Ser Thr Gln Thr His Lys Ile Met Glu Asn
 1145 1150 1155

Lys Met Cys Asp Leu Thr Val

1160

1165

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 <211> 504
 <212> DNA
 <213> Sus scrofa

<400> 11
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 aggatcagtg acatttcaca catgcagtct gtctcctcca aacagagggt caccggtttg 180
 gacttcatcc ctgggctcca tcctgtcctg agtttgtcca agatggacca gaccctggcg 240
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 caggccaggg ccctggagac cttggagagc ctgggcggcg tcctggaagc ctccctctac 420
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<210> 12
 <211> 167
 <212> PRT
 <213> Sus scrofa

<400> 12
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 Ser Tyr Val Glu Ala Val Pro Ile Trp Arg Val Gln Asp Asp Thr Lys
 20 25 30
 Thr Leu Ile Lys Thr Ile Val Thr Arg Ile Ser Asp Ile Ser His Met
 35 40 45
 Gln Ser Val Ser Ser Lys Gln Arg Val Thr Gly Leu Asp Phe Ile Pro
 50 55 60
 Gly Leu His Pro Val Leu Ser Leu Ser Lys Met Asp Gln Thr Leu Ala
 65 70 75 80
 Ile Tyr Gln Gln Ile Leu Thr Ser Leu Pro Ser Arg Asn Val Ile Gln
 85 90 95

Ile Ser Asn Asp Leu Glu Asn Leu Arg Asp Leu Leu His Leu Leu Ala
 100 105 110

Ser Ser Lys Ser Cys Pro Leu Pro Gln Ala Arg Ala Leu Glu Thr Leu
 115 120 125

Glu Ser Leu Gly Gly Val Leu Glu Ala Ser Leu Tyr Ser Thr Glu Val
 130 135 140

Val Ala Leu Ser Arg Leu Gln Gly Ala Leu Gln Asp Met Leu Arg Gln
 145 150 155 160

Leu Asp Leu Ser Pro Gly Cys
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<210> 13
 <211> 1413
 <212> DNA
 <213> Mus musculus

<220>
 <221> misc_feature
 <222> (1216)..(1216)
 <223> "n" can be either "a", "c", "t", or "g"

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 caactgtgtc atttgggggt gactgatgta ccttgctttg aaccttacac actgcctttc 180
 tgcaaatgtg actgaatgaa gatgtaaata ctgagcatta aaatgtgtct tttcttttag 240
 cctgaaacat ttgagcatct ttttaccaag catgcagaat cagtgatatt tggtcctctt 300
 cttctggagc ctgaacccat ttcagaagaa atcagtgtcg atacagcttg gaaaaataaa 360
 gatgagatgg tcccagcagc tatggtctcc cttcttttga ccacaccaga ccctgaaagc 420
 agttctatct gtattagtga ccagtgtaac agtgctaact tctctgggtc tcagagcacc 480
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 aactgcatct ccagtaatca ttccccactg aggcagtctt tctctagcag ctctctgggag 660
 acagaggccc agacattttt cctttttatca gaccagcaac ccaccatgat ttcaccacaa 720

ctttcattct cggggttgga tgagcttttg gaactggagg gaagttttcc tgaagaaaat 780
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 gtgcttttga ctgggtgaggc aggaatcctg tgcacattcc cagcccagtg tctgttcagt 900
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 gatattgaca gctgaacaaa aaggtttcaa gct 1413

<210> 14
 <211> 1174
 <212> PRT
 <213> Mus musculus

<400> 14

Met Met Cys Gln Lys Phe Tyr Val Val Leu Leu His Trp Glu Phe Leu
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Tyr Val Ile Ala Ala Leu Asn Leu Ala Tyr Pro Ile Ser Pro Trp Lys
 20 25 30

Phe Lys Leu Phe Cys Gly Pro Pro Asn Thr Thr Asp Asp Ser Phe Leu
 35 40 45

Ser Pro Ala Gly Ala Pro Asn Asn Ala Ser Ala Leu Lys Gly Ala Ser
 50 55 60

Glu Ala Ile Val Glu Ala Lys Phe Asn Ser Ser Gly Ile Tyr Val Pro
 65 70 75 80

Glu Leu Ser Lys Thr Val Phe His Cys Cys Phe Gly Asn Glu Gln Gly
 85 90 95

Gln Asn Cys Ser Ala Leu Thr Asp Asn Thr Glu Gly Lys Thr Leu Ala

100					105					110					
Ser	Val	Val	Lys	Ala	Ser	Val	Phe	Arg	Gln	Leu	Gly	Val	Asn	Trp	Asp
		115					120					125			
Ile	Glu	Cys	Trp	Met	Lys	Gly	Asp	Leu	Thr	Leu	Phe	Ile	Cys	His	Met
	130					135					140				
Glu	Pro	Leu	Pro	Lys	Asn	Pro	Phe	Lys	Asn	Tyr	Asp	Ser	Lys	Val	His
145						150					155				160
Leu	Leu	Tyr	Asp	Leu	Pro	Glu	Val	Ile	Asp	Asp	Ser	Pro	Leu	Pro	Pro
				165					170					175	
Leu	Lys	Asp	Ser	Phe	Gln	Thr	Val	Gln	Cys	Asn	Cys	Ser	Leu	Arg	Gly
			180					185					190		
Cys	Glu	Cys	His	Val	Pro	Val	Pro	Arg	Ala	Lys	Leu	Asn	Tyr	Ala	Leu
		195					200					205			
Leu	Met	Tyr	Leu	Glu	Ile	Thr	Ser	Ala	Gly	Val	Ser	Phe	Gln	Ser	Pro
	210					215					220				
Leu	Met	Ser	Leu	Gln	Pro	Met	Leu	Val	Val	Lys	Pro	Asp	Pro	Pro	Leu
225						230					235				240
Gly	Leu	His	Met	Glu	Val	Thr	Asp	Asp	Gly	Asn	Leu	Lys	Ile	Ser	Trp
				245					250					255	
Asp	Ser	Gln	Thr	Met	Ala	Pro	Phe	Pro	Leu	Gln	Tyr	Gln	Val	Lys	Tyr
			260					265					270		
Leu	Glu	Asn	Ser	Thr	Ile	Val	Arg	Glu	Ala	Ala	Glu	Ile	Val	Ser	Ala
		275					280					285			
Thr	Ser	Leu	Leu	Val	Asp	Ser	Val	Leu	Pro	Gly	Ser	Ser	Tyr	Glu	Val
	290					295					300				
Gln	Val	Arg	Ser	Lys	Arg	Leu	Asp	Gly	Ser	Gly	Val	Trp	Ser	Asp	Trp
305						310					315				320
Ser	Ser	Pro	Gln	Val	Phe	Thr	Thr	Gln	Asp	Val	Val	Tyr	Phe	Pro	Pro
				325					330					335	

Lys Ile Leu Thr Ser Val Gly Ser Asn Ala Ser Phe His Cys Ile Tyr
340 345 350

Lys Asn Glu Asn Gln Ile Ile Ser Ser Lys Gln Ile Val Trp Trp Arg
355 360 365

Asn Leu Ala Glu Lys Ile Pro Glu Ile Gln Tyr Ser Ile Val Ser Asp
370 375 380

Arg Val Ser Lys Val Thr Phe Ser Asn Leu Lys Ala Thr Arg Pro Arg
385 390 395 400

Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu Gln Ala Cys
405 410 415

His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val Asn Ile Asn Ile
420 425 430

Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg Trp Ser
435 440 445

Pro Ser Thr Ile Gln Ser Leu Val Gly Ser Thr Val Gln Leu Arg Tyr
450 455 460

His Arg Arg Ser Leu Tyr Cys Pro Asp Ser Pro Ser Ile His Pro Thr
465 470 475 480

Ser Glu Pro Lys Asn Cys Val Leu Gln Arg Asp Gly Phe Tyr Glu Cys
485 490 495

Val Phe Gln Pro Ile Phe Leu Leu Ser Gly Tyr Thr Met Trp Ile Arg
500 505 510

Ile Asn His Ser Leu Gly Ser Leu Asp Ser Pro Pro Thr Cys Val Leu
515 520 525

Pro Asp Ser Val Val Lys Pro Leu Pro Pro Ser Asn Val Lys Ala Glu
530 535 540

Ile Thr Val Asn Thr Gly Leu Leu Lys Val Ser Trp Glu Lys Pro Val
545 550 555 560

Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile Arg Tyr Gly Leu Ser Gly
565 570 575

Lys Glu Ile Gln Trp Lys Thr His Glu Val Phe Asp Ala Lys Ser Lys
580 585 590

Ser Ala Ser Leu Leu Val Ser Asp Leu Cys Ala Val Tyr Val Val Gln
595 600 605

Val Arg Cys Arg Arg Leu Asp Gly Leu Gly Tyr Trp Ser Asn Trp Ser
610 615 620

Ser Pro Ala Tyr Thr Leu Val Met Asp Val Lys Val Pro Met Arg Gly
625 630 635 640

Pro Glu Phe Trp Arg Lys Met Asp Gly Asp Val Thr Lys Lys Glu Arg
645 650 655

Asn Val Thr Leu Leu Trp Lys Pro Leu Thr Lys Asn Asp Ser Leu Cys
660 665 670

Ser Val Arg Arg Tyr Val Val Lys His Arg Thr Ala His Asn Gly Thr
675 680 685

Trp Ser Glu Asp Val Gly Asn Arg Thr Asn Leu Thr Phe Leu Trp Thr
690 695 700

Glu Pro Ala His Thr Val Thr Val Leu Ala Val Asn Ser Leu Gly Ala
705 710 715 720

Ser Leu Val Asn Phe Asn Leu Thr Phe Ser Trp Pro Met Ser Lys Val
725 730 735

Ser Ala Val Glu Ser Leu Ser Ala Tyr Pro Leu Ser Ser Ser Cys Val
740 745 750

Ile Leu Ser Trp Thr Leu Ser Pro Asp Asp Tyr Ser Leu Leu Tyr Leu
755 760 765

Val Ile Glu Trp Lys Ile Leu Asn Glu Asp Asp Gly Met Lys Trp Leu
770 775 780

Arg Ile Pro Ser Asn Val Lys Lys Phe Tyr Ile His Asp Asn Phe Ile
785 790 795 800

Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr Pro Val Phe Met Glu Gly
805 810 815

Val Gly Lys Pro Lys Ile Ile Asn Gly Phe Thr Lys Asp Ala Ile Asp
820 825 830

Lys Gln Gln Asn Asp Ala Gly Leu Tyr Val Ile Val Pro Ile Ile Ile
835 840 845

Ser Ser Cys Val Leu Leu Leu Gly Thr Leu Leu Ile Ser His Gln Arg
850 855 860

Met Lys Lys Leu Phe Trp Asp Asp Val Pro Asn Pro Lys Asn Cys Ser
865 870 875 880

Trp Ala Gln Gly Leu Asn Phe Gln Lys Pro Glu Thr Phe Glu His Leu
885 890 895

Phe Thr Lys His Ala Glu Ser Val Ile Phe Gly Pro Leu Leu Leu Glu
900 905 910

Pro Glu Pro Ile Ser Glu Glu Ile Ser Val Asp Thr Ala Trp Lys Asn
915 920 925

Lys Asp Glu Met Val Pro Ala Ala Met Val Ser Leu Leu Leu Thr Thr
930 935 940

Pro Asp Pro Glu Ser Ser Ser Ile Cys Ile Ser Asp Gln Cys Asn Ser
945 950 955 960

Ala Asn Phe Ser Gly Ser Gln Ser Thr Gln Val Thr Cys Glu Asp Glu
965 970 975

Cys Gln Arg Gln Pro Ser Val Lys Tyr Ala Thr Leu Val Ser Asn Asp
980 985 990

Lys Leu Val Glu Thr Asp Glu Glu Gln Gly Phe Ile His Ser Pro Val
995 1000 1005

Ser Asn Cys Ile Ser Ser Asn His Ser Pro Leu Arg Gln Ser Phe

1010	1015	1020
Ser Ser Ser Ser Trp Glu Thr	Glu Ala Gln Thr Phe	Phe Leu Leu
1025	1030	1035
Ser Asp Gln Gln Pro Thr Met	Ile Ser Pro Gln Leu	Ser Phe Ser
1040	1045	1050
Gly Leu Asp Glu Leu Leu Glu	Leu Glu Gly Ser Phe	Pro Glu Glu
1055	1060	1065
Asn His Arg Glu Lys Ser Val	Cys Tyr Leu Gly Val	Thr Ser Val
1070	1075	1080
Asn Arg Arg Glu Ser Gly Val	Leu Leu Thr Gly Glu	Ala Gly Ile
1085	1090	1095
Leu Cys Thr Phe Pro Ala Gln	Cys Leu Phe Ser Asp	Ile Arg Ile
1100	1105	1110
Leu Gln Glu Arg Cys Ser His	Phe Val Glu Asn Asn	Leu Ser Leu
1115	1120	1125
Gly Thr Ser Gly Glu Asn Phe	Val Pro Tyr Met Pro	Gln Phe Gln
1130	1135	1140
Thr Cys Ser Thr His Ser His	Lys Ile Met Glu Asn	Lys Met Cys
1145	1150	1155
Asp Leu Thr Val Gln Ser His	Pro Lys Ser Leu Lys	Val Pro Phe
1160	1165	1170

Gln

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 <211> 4067
 <212> DNA
 <213> Bos taurus

<400> 15
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ggcaaccact	tgtattcttc	caagacctcc	ccttcgcctt	caatacccag	ctcaggcgac	180
acctcttctc	agggaggcca	ctttgtaatc	ctgcaatatc	ttgtccttct	tgcagagctc	240
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tactgctacg	gcctgtttac	tatctcccct	attaaactgg	aaacactttg	agagtaaaaa	420
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gatacagggg	gagtttttag	cggttatggg	atatgcctgc	agtcgtacag	ctattaaatg	780
tctggattca	aaccagacct	tgaaagcccg	ccgtccaccc	gctcgtgccc	tggtcactg	840
ctgcgtggtc	tacagcacac	ctcctgtggt	tttcttgatt	ccgccgcacc	tctcccagg	900
gagtgccttt	cattactgtc	atttctagac	aatgaattgt	ctttgaggag	atgatagcca	960
tggcagacag	caaatactcgt	tgttatccgc	atctgaagac	gtggatgcgg	gtggtaacgg	1020
agcacgtggg	tgttctcgga	gatcgacgat	gtgccacgtg	tggtttcttc	tgttttcagg	1080
ccccagaagc	ccatcccggg	aaggaaaatg	cgctgtggac	ccctgtatcg	attcctgtgg	1140
ctttggccct	atctgtctta	cgtggaggct	gtgcccaccc	gcaagggtcca	ggatgacacc	1200
aaaacctca	tcaagacaat	tgtcaccagg	atcaatgaca	tctcacacac	ggtagggagg	1260
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